

CLAIMS

1 1. A method of performing an audio conference of multiple attendees, including the
2 steps of
3 (A) receiving input samples of PCM information from each attendee in the
4 conference;
5 (B) calculating the energy of each sample for each attendee of the conference;
6 (C) selecting a predetermined number of samples that exhibit the highest en-
7 ergy;
8 (D) generating a histogram to determine one or more noise peaks;
9 (E) selecting one of said noise peaks as a noise floor;
10 (F) muting incoming samples that exceed said noise floor; and
11 (G) summing a predetermined number of non-muted samples whose energies
12 are the largest to produce a conference output signal.

1 2. A method of performing an audio conference of multiple attendees, in-
2 cluding the steps of
3 (A) receiving the input samples of PCM information from each attendee in the
4 conference;
5 (B) calculating the energy of each sample for each attendee of the conference;
6 (C) suppressing any echo out of said conference output signal by aggregating
7 the energies calculated from each sample during the predetermined time period; and
8 (1) populating a matrix with the energy aggregates that are calculated;
9 (2) solving normal equations for said matrix to produce results;
10 (3) evaluating said results ;
11 (3) applying a moving average to said results across the time dimen-
12 sion;
13 (4) selecting peaks and a predetermined time lag that represent echo in
14 said energies;

- 15 (5) evaluating incoming speech samples and finding those having an
16 energy value is less than the predetermined peak energy at that predeter-
17 mined time lag;
18 (6) masking any such samples whose energies are less than or equal to
19 the predetermined peak, thus suppressing the echo in said sample;
20 (D) selecting a predetermined number of samples that exhibit the highest en-
21 ergy;
22 (E) summing these energies to produce a conference output signal; and
23 (F) for each attendee of the conference, subtracting any speech attributable to
24 that attendee from his own returned conference output signal.

- 1 3. A method of performing an audio conference of multiple attendees, including the
2 steps of:
3 (A) receiving input samples of PCM information from each attendee in a con-
4 ference;
5 (B) for each attendee of the conference, detecting dual tone multi-frequency
6 tones employing a detector to identify a row tone and a column tone;
7 (C) adjusting a filter to apply a coefficient that multiplies the signal by a pre-
8 determined amount in order to remove each row tone and each column tone to thereby
9 remove the DTMF from the signal; and
10 (D) sending the signal with the DTMF having been removed to a conferencing
11 process to be summed with other attendee signals.